

ETX-Processor Board AMD

SC1200 - Revision 3

SEITE	INHALT
1	Cover
2	AMD SC1200 - PCI - ISA
3	AMD SC1200 - Memory interface
4	AMD SC1200 - Power
5	AMD SC1200 - Video
6	SO-DIMM
7	IDE
8	Ethernet
9	BootROM - Audio - USB
10	LPC-ISA Bridge
11	LPC-SIO
12	ETX Power
13	LVDS
14	ETX Connector
15	Daughterboard Connectors
16	Revision History


Groups:

not populated

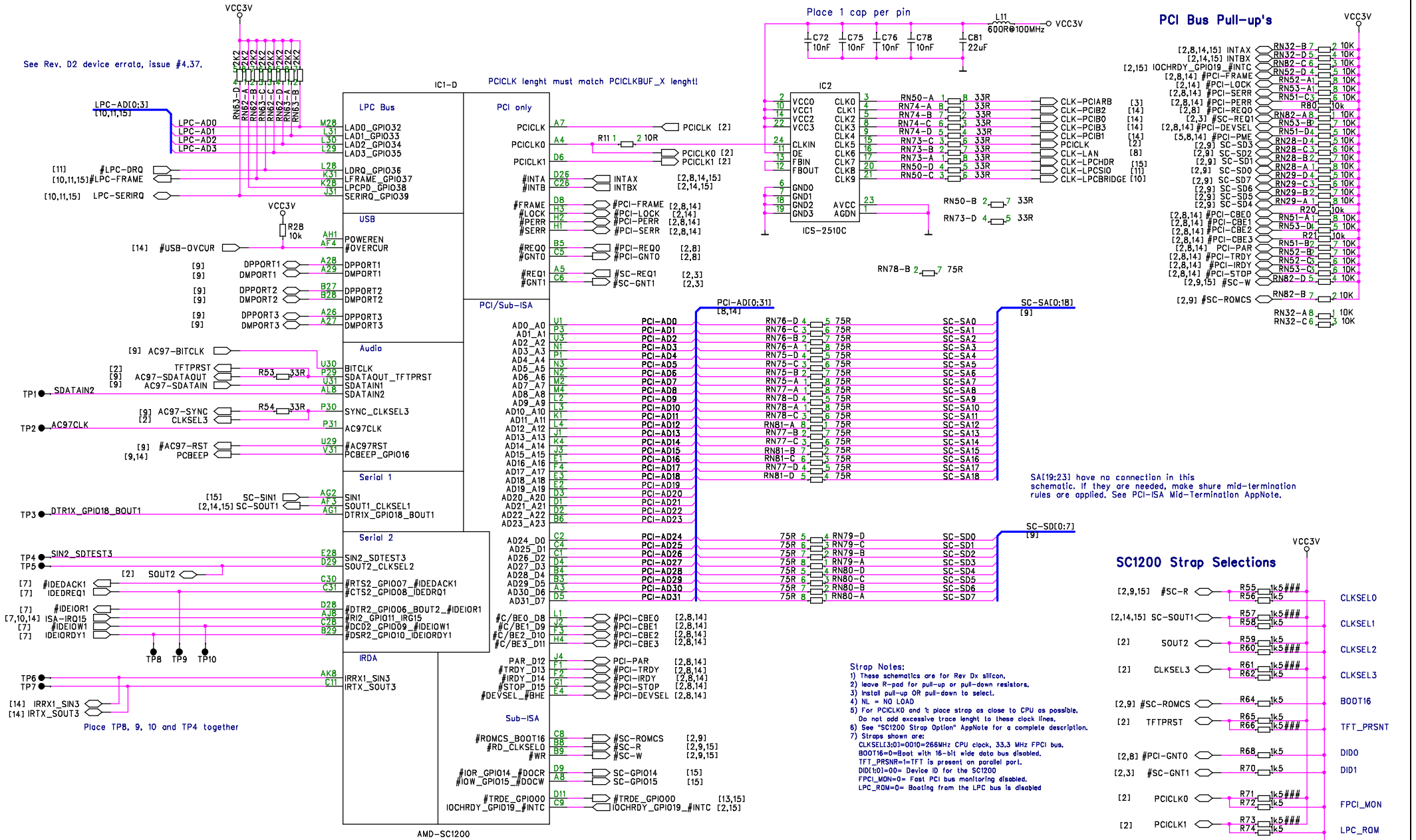
REVISION HISTORY			
REV	DATE	NAME	
01	22.03.2004	R. Lindner	Prototype L1/B1
02	29.07.2004	R. Lindner	Prototype L2/B2 Changes Listed in Revision History
03	21.10.04	R. Lindner	Prototype L3/B3 Changes Listed in Revision History

LK1

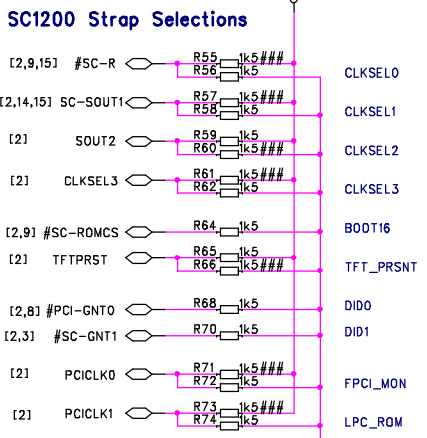
ESA2 L3/B3

Stromlaufplan	Datum: 03.11.2004	Size: A3
 kontron ... always a Jump ahead! Kontron CSS GmbH	Titel: ESA2	PCB: L3/B3
	Nr.: 3802.00	Rev: 03
	Datei: ESA2_xx03.SCH	Blatt: 01/16

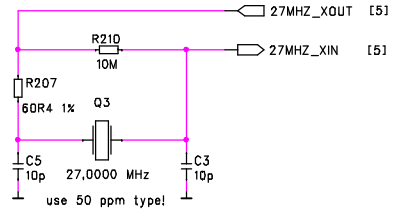
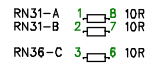
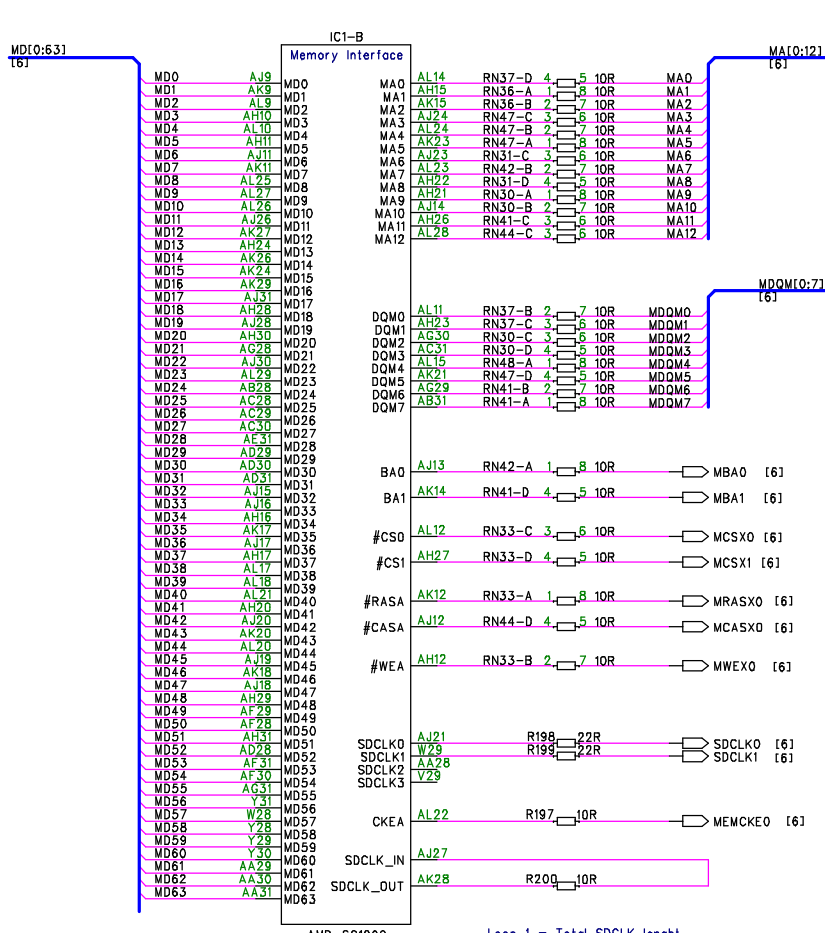
See Rev. D2 device errata, issue #4.37.



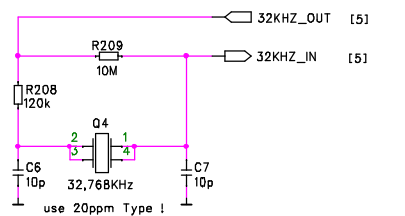
SA[19:23] have no connection in this schematic. If they are needed, make sure mid-termination rules are applied. See PCI-ISA Mid-Termination AppNote.



Strap Notes:
 1) These schematics are for Rev Dx silicon.
 2) leave R-pad for pull-up or pull-down resistors.
 3) install pull-up OR pull-down to select.
 4) NL = NO LOAD
 5) For PCICLK and \bar{R} , place strap as close to CPU as possible.
 6) Do not add excessive trace length to these clock lines.
 6) See "SC1200 Strap Option" Appnote for a complete description.
 7) Straps shown are:
 CLKSEL3[0]=0010=266MHz CPU clock, 33.3 MHz FPCI bus.
 BOOT16=0=Boot with 18-bit wide data bus disabled.
 TFTP_PRSTR=1=FTT is present on parallel port.
 DID1[0]=0= Device ID for the SC1200
 FPCI_MON=0= Fast PCI bus monitoring disabled.
 LPC_ROM=0= Booting from the LPC bus is disabled

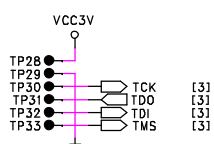
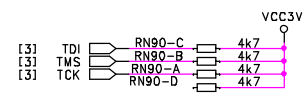
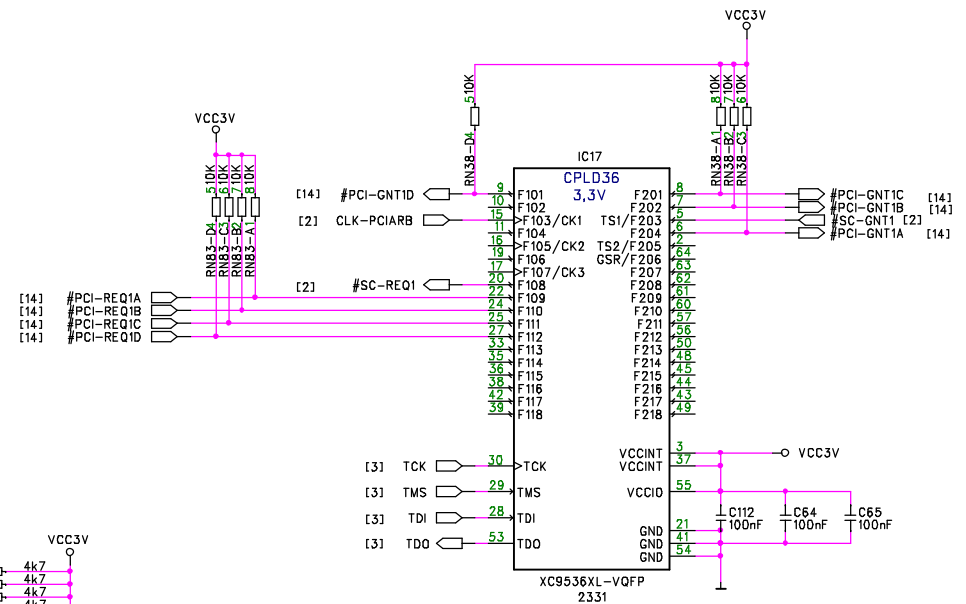


27 MHz Oscillator



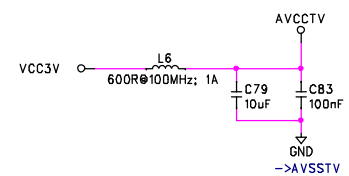
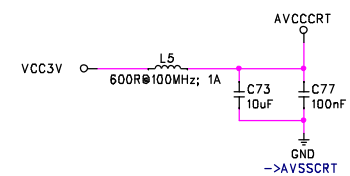
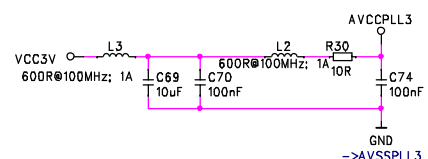
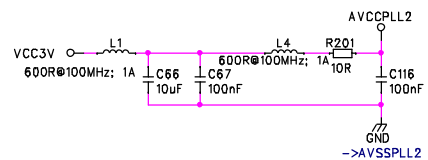
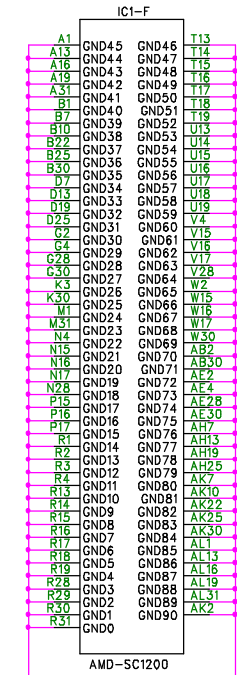
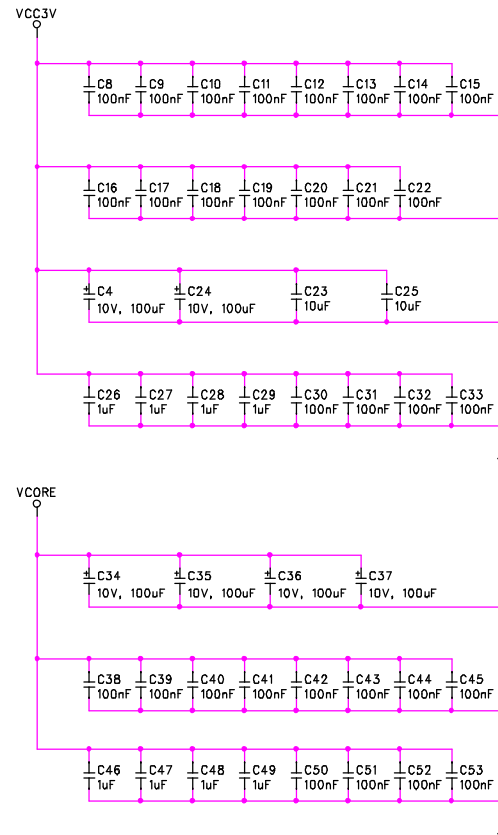
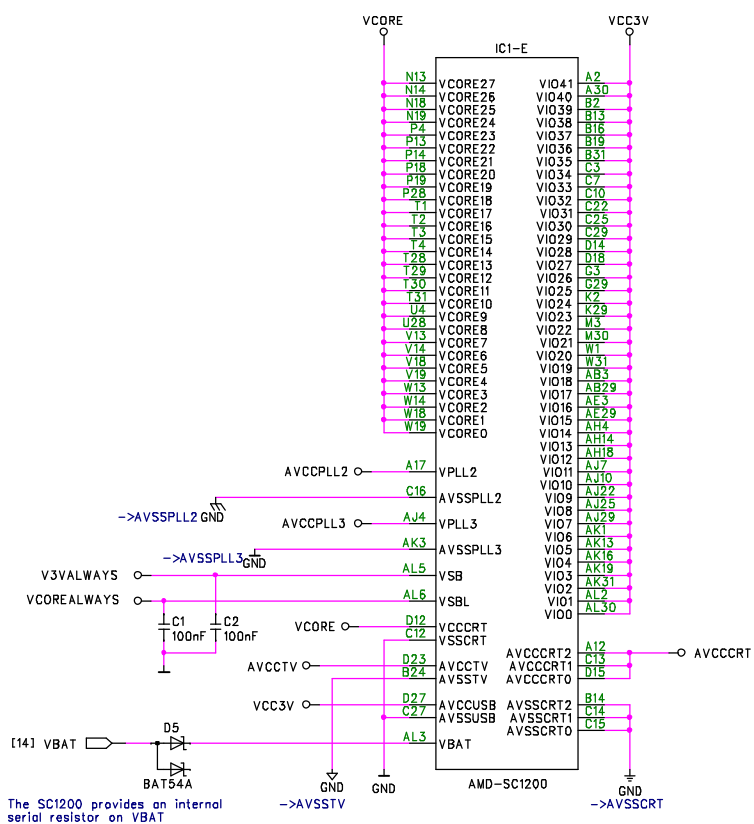
32 kHz Oscillator

Loop 1 = Total SDCLK length
 SDCLK routing: "See SC1200 Layout Guidelines"
 Any SDCLK Signal can be connected to make routing easier.
 Place series Resistors as close as possible to SC1200.



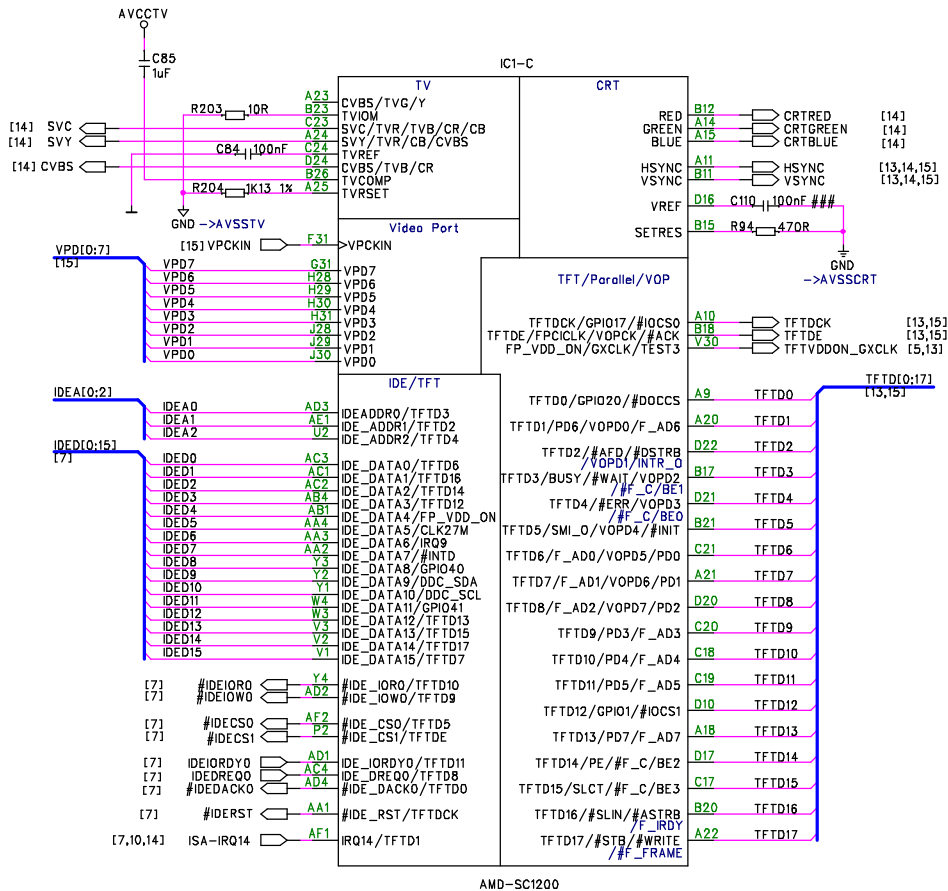
SC1200_MEM_OSC_PCI-Arbitrer

Stromlaufplan	Datum: 03.11.2004	Size: A3
kontron ... always a Jump ahead!	Titel: ESA2	PCB: L3/B3
Kontron CSS GmbH	Nr.: 3802.00	Rev: 03
	Datei: ESA2_xx03.SCH	Blatt: 03/16

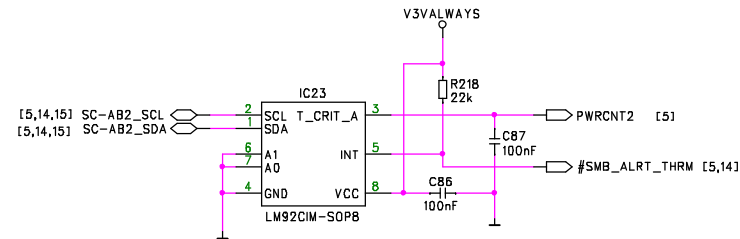


Attention!
 Use separate power planes for every of the following GND-Connections marked as:
 ->AVSSCRT (this page and page 5)
 ->AVSSTV (this page and page 5)
 ->AVSSPLL2 (only on this page)
 ->AVSSPLL3 (only on this page)
 make Ground Cut with a single connection to GND-Plane

These filtered analog supplies should be laid out using separate power planes.
 See Layout Guidelines for details.

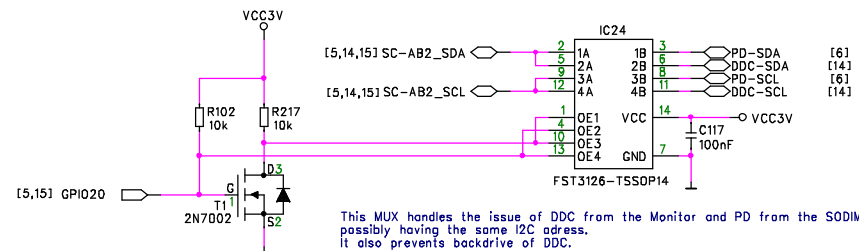


AMD-SC1200

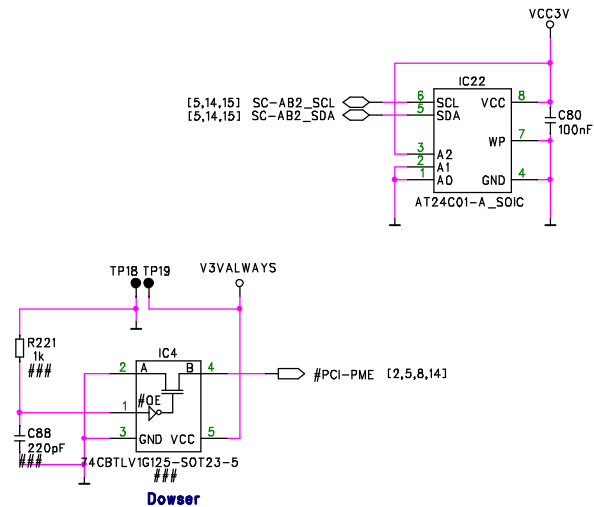


Place LM92 as close as possible to a corner of the SC1200
Create a copper shape or make sure the LM92 and SC1200 have a continuous ground plane to allow thermal coupling.
This will ensure consistent and useful temperature readings for the SC1200

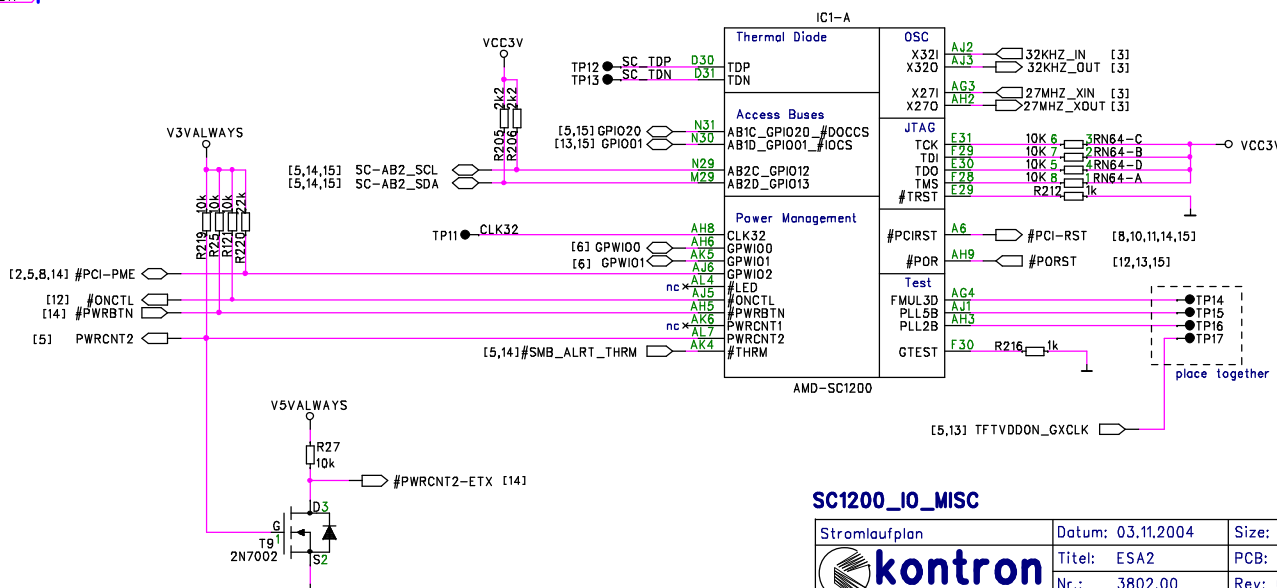
T_CRIT_A of the LM92 is open collector and it goes low if T_CRIT_A register is exceeded.
#ONCTRL from the SC1200 is open drain, goes low to shut off power.
Connecting these two together with a pull-up creates a wired-OR circuit. If either goes low the ATX Power Supply PS_ON will be low and shut off the system.




This MUX handles the issue of DDC from the Monitor and PD from the SODIMM possibly having the same I2C address.
It also prevents backdrive of DDC.

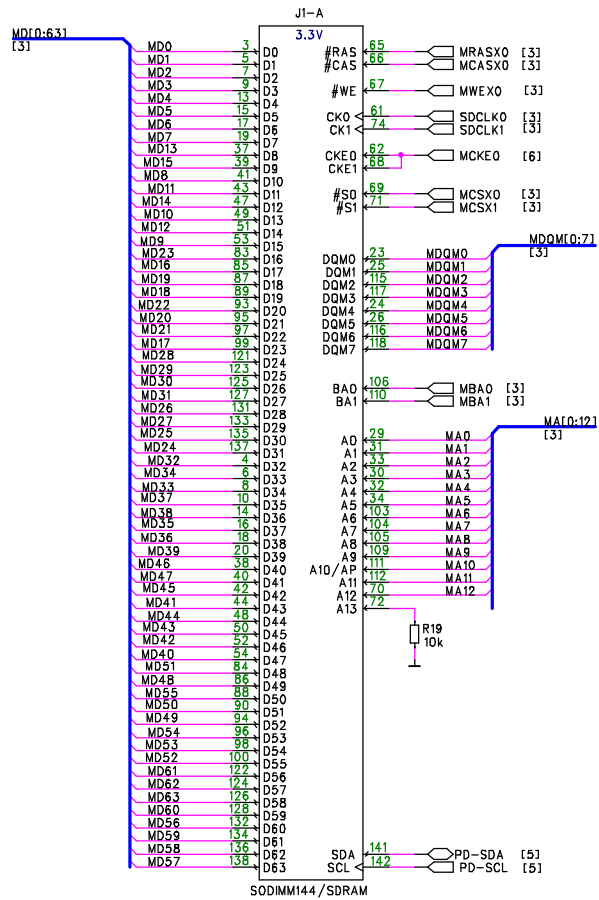


Dowser

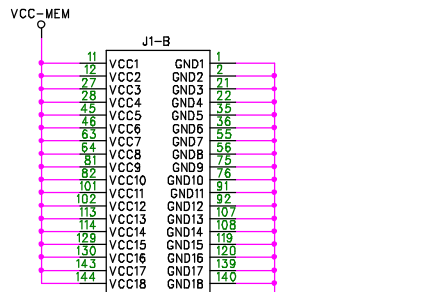
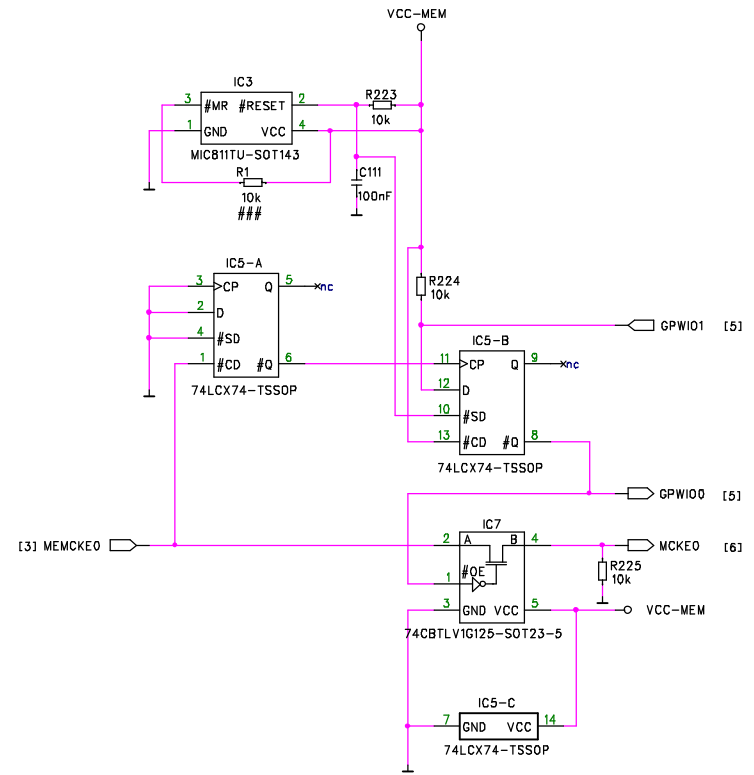


SC1200_IO_MISC

Stromlaufplan	Datum: 03.11.2004	Size: A3
 Kontron CSS GmbH	Titel: ESA2	PCB: L3/B3
	Nr.: 3802.00	Rev: 03
	Datei: ESA2_xx03.SCH	Blatt: 05/16



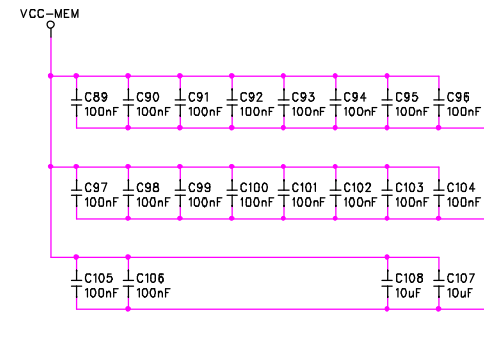
SODIMM144 /SDRAM




SODIMM144 /SDRAM

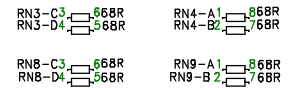
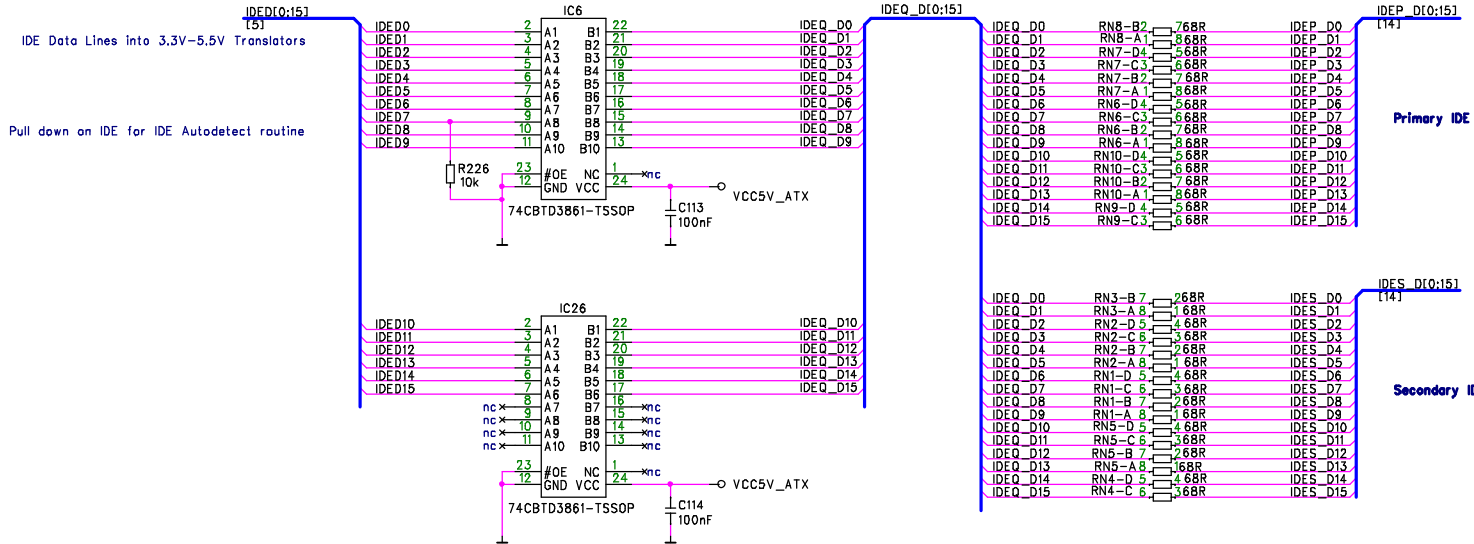


These memory test signals allow use of the LALBAGH test interface.

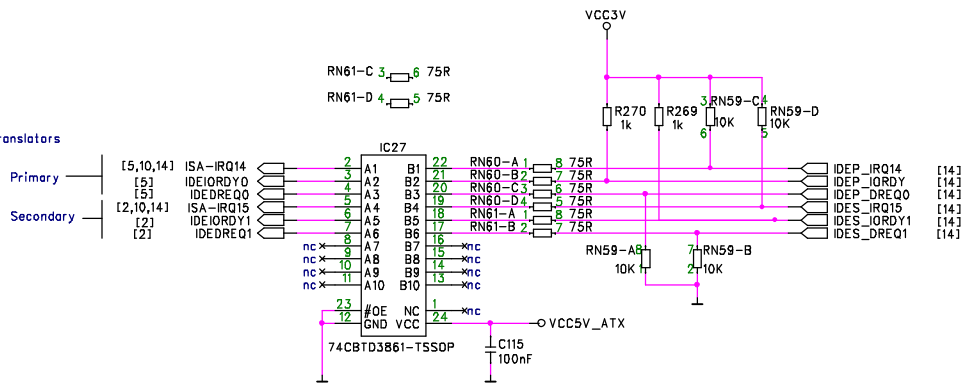


Memory Socket_ Suspend to RAM

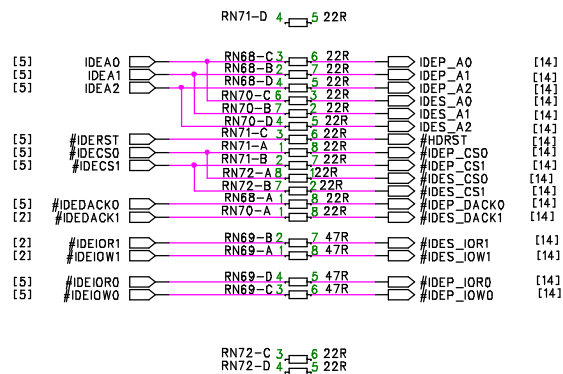
Stromlaufplan	Datum: 03.11.2004	Size: A3
 Kontron ... always a Jump ahead!	Titel: ESA2	PCB: L3/B3
Kontron CSS GmbH	Nr.: 3802.00	Rev: 03
	Datei: ESA2_xx03.SCH	Blatt: 06/16




Other Signals requiring 3.3V - 5V Translators

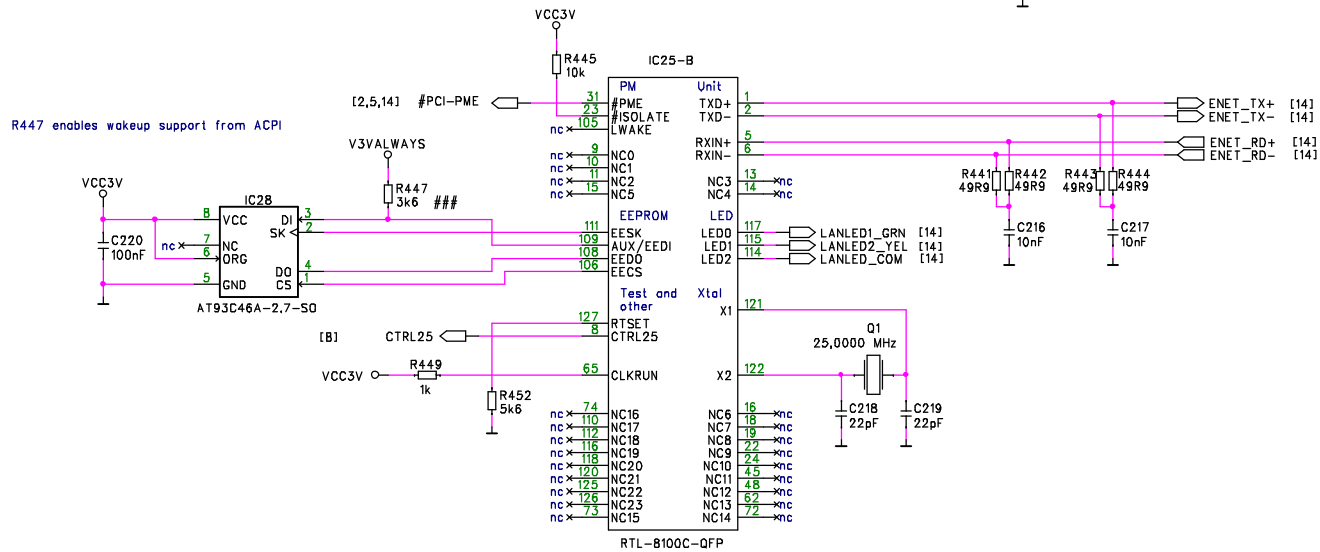
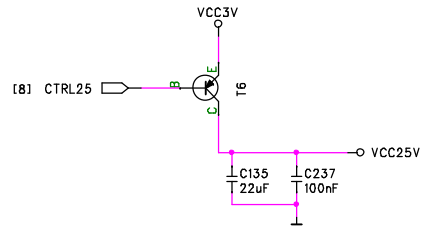
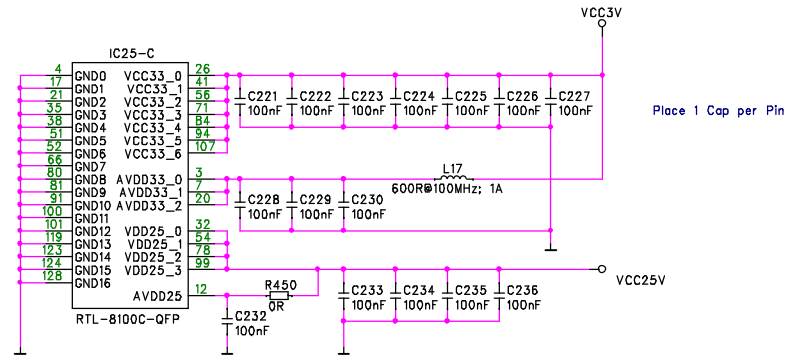
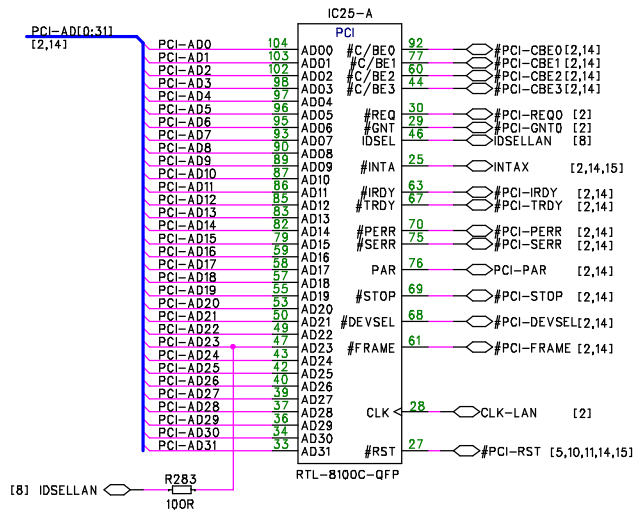


IDE Signals not requiring 3.3V-5V translators (outputs from SC1200).



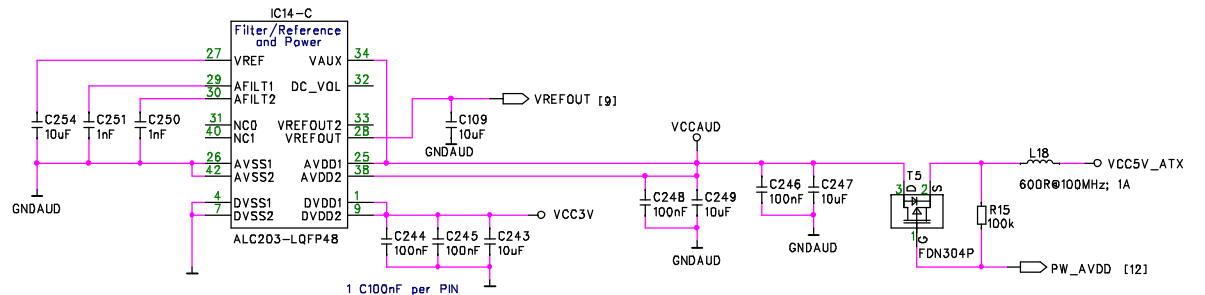
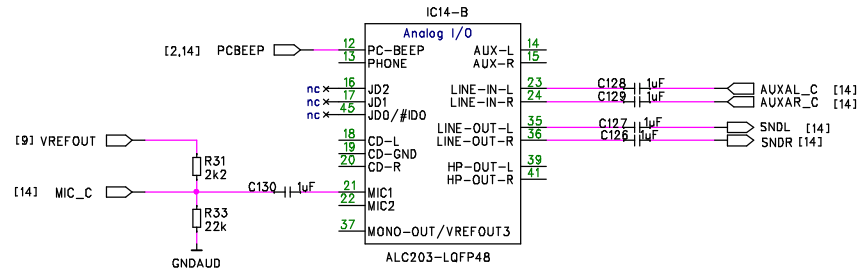
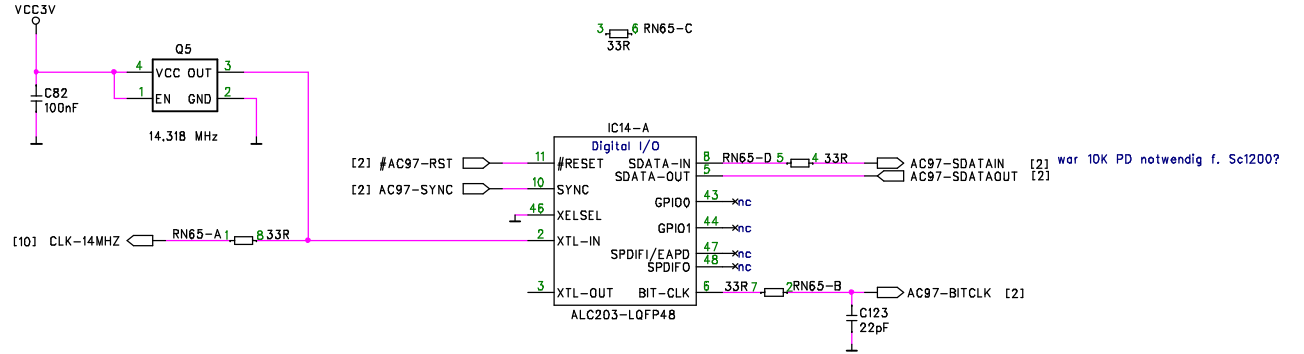
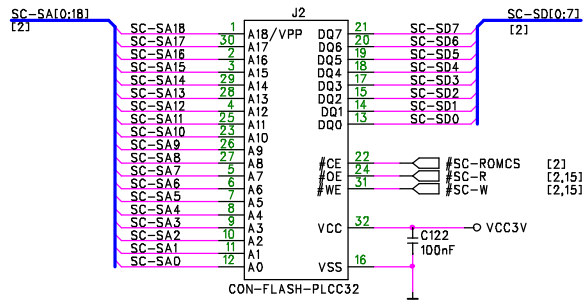
IDE

Stromlaufplan	Datum: 03.11.2004	Size: A3
 Kontron ... always a Jump ahead!	Titel: ESA2	PCB: L3/B3
Kontron CSS GmbH	Nr.: 3802.00	Rev: 03
	Datei: ESA2_xx03.SCH	Blatt: 07/16



Ethernet

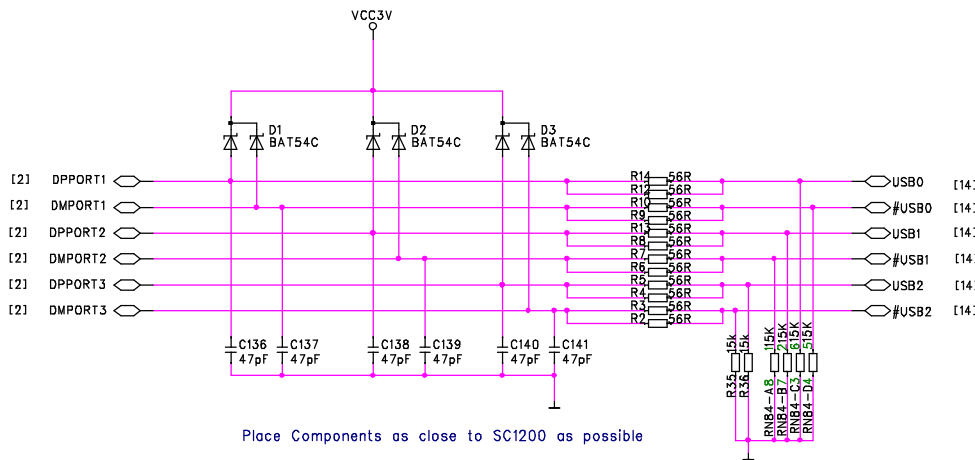
Stromlaufplan	Datum: 03.11.2004	Size: A3
 Kontron CSS GmbH	Titel: ESA2	PCB: L3/B3
	Nr.: 3802.00	Rev: 03
	Datei: ESA2_xx03.SCH	Blatt: 08/16



T5 is needed for ALC203 power sequencing
DVDD should be more than 2V before AVDD starts.

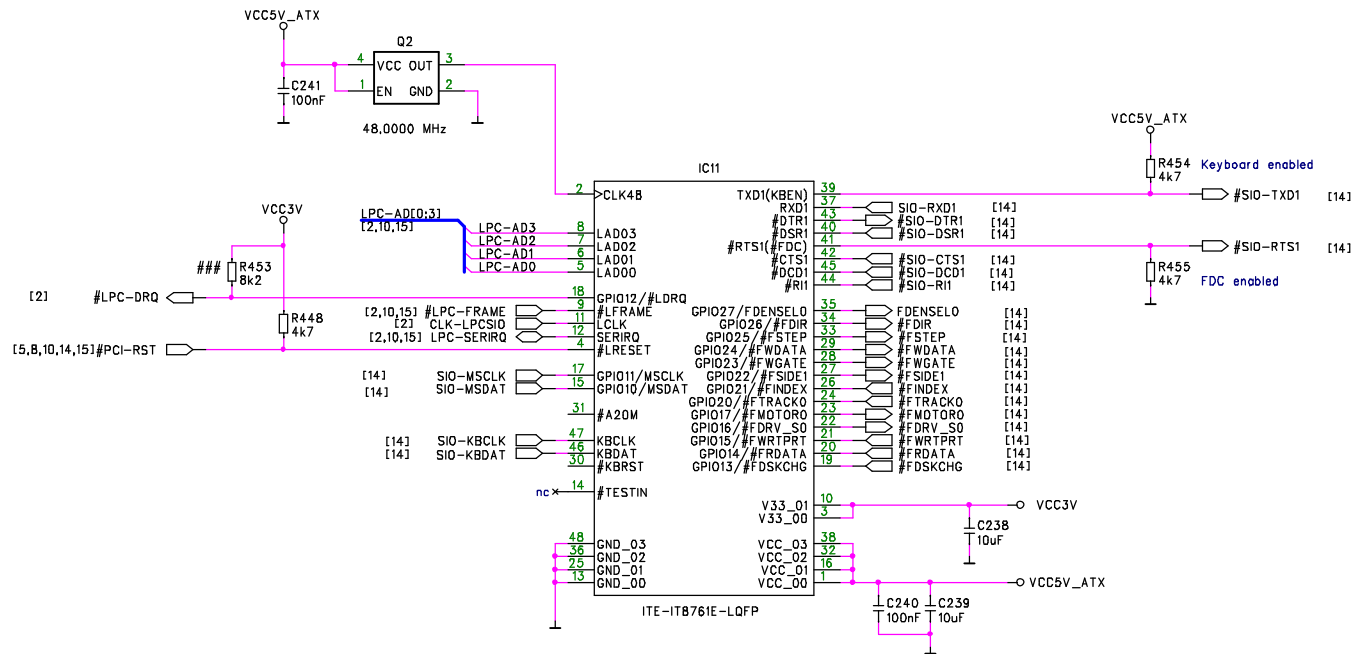
CABLE CRIMP PROTECTION

USB 1.1 compliance required




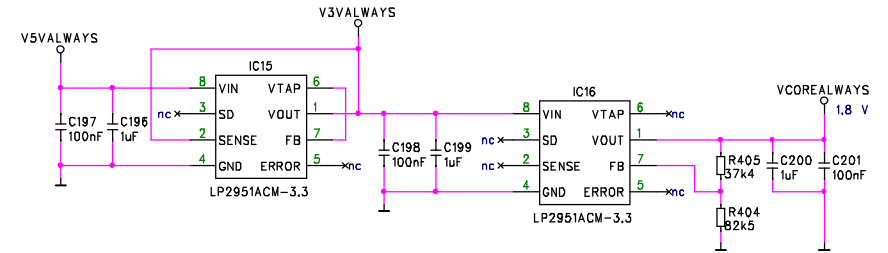
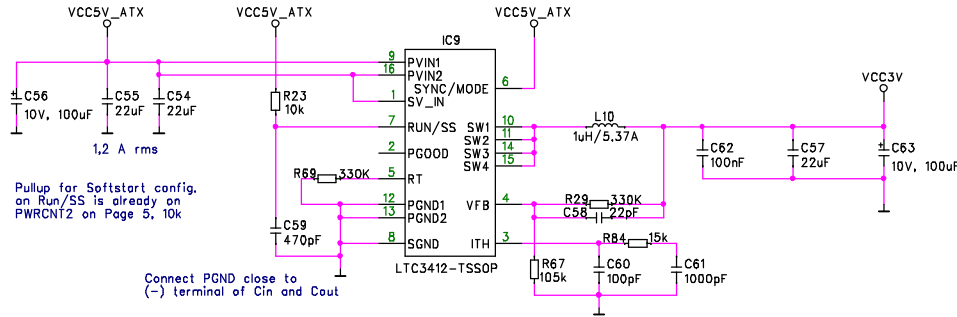
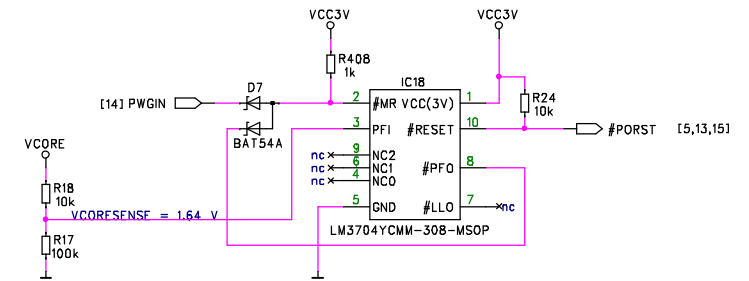
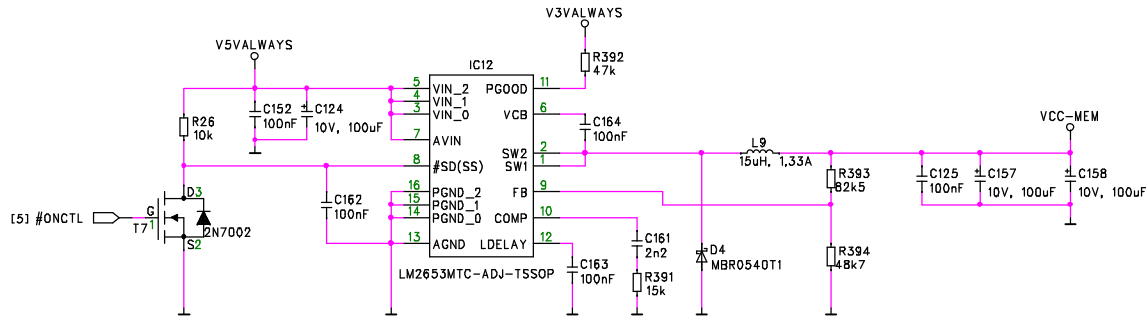
Boot-ROM_USB_Audio

Stromlaufplan	Datum: 03.11.2004	Size: A3
kontron ... always a Jump ahead!	Titel: ESA2	PCB: L3/B3
Kontron CSS GmbH	Nr.: 3802.00	Rev: 03
	Datei: ESA2_xx03.SCH	Blatt: 09/16

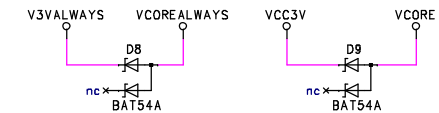
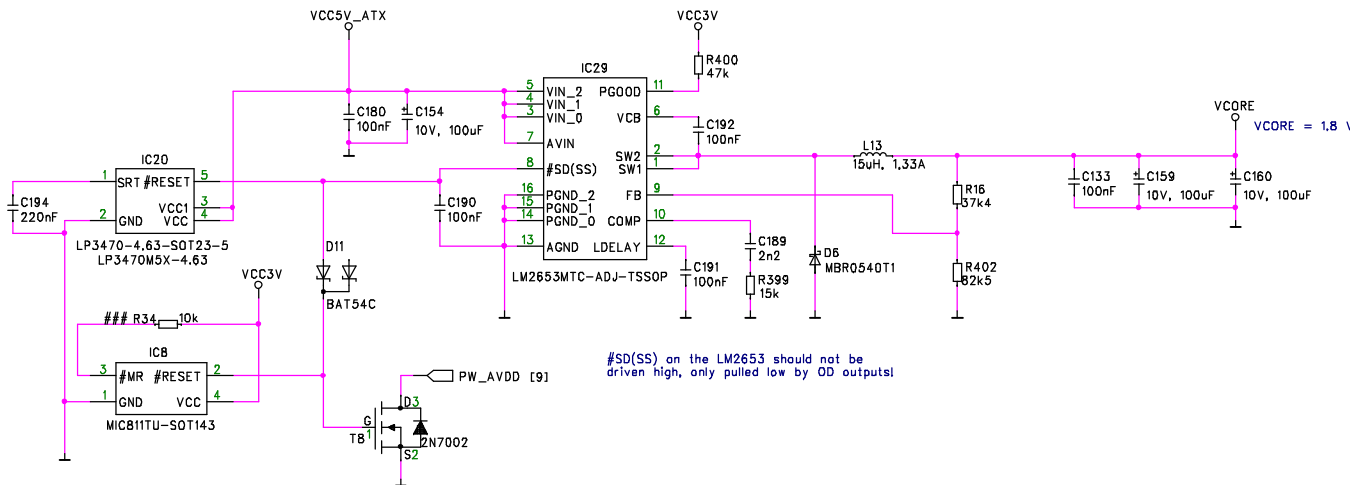


LPC-SIO


Stromlaufplan	Datum: 03.11.2004	Size: A3
 Kontron CSS GmbH	Titel: ESA2	PCB: L3/B3
	Nr.: 3802.00	Rev: 03
	Datei: ESA2_xx03.SCH	Blatt: 11/16

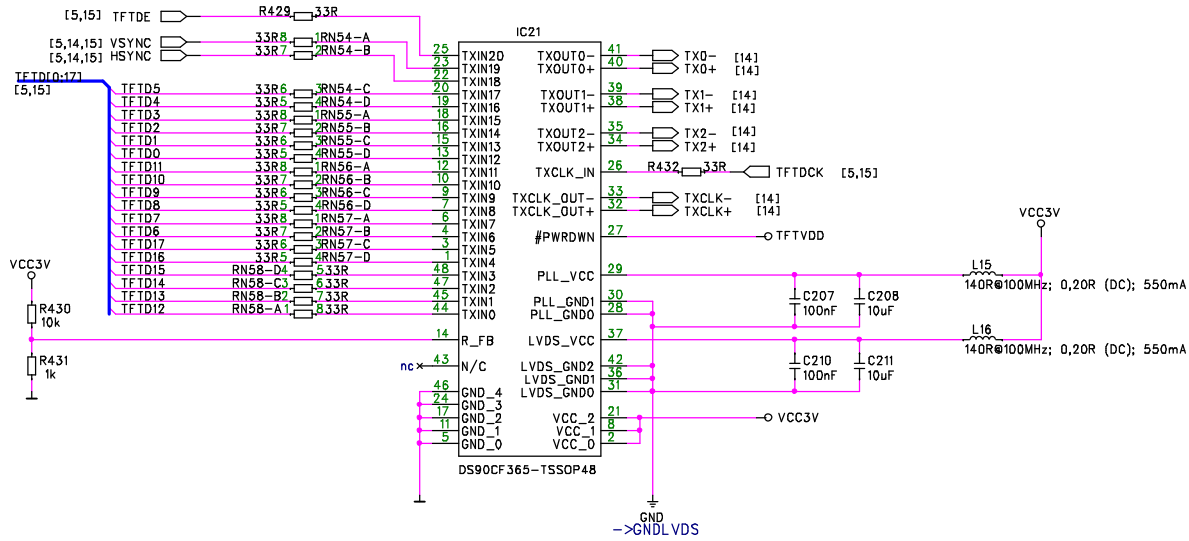


CAUTION!: VCOREALWAYS AND VCORE MUST BE SET TO THE SAME VOLTAGE!

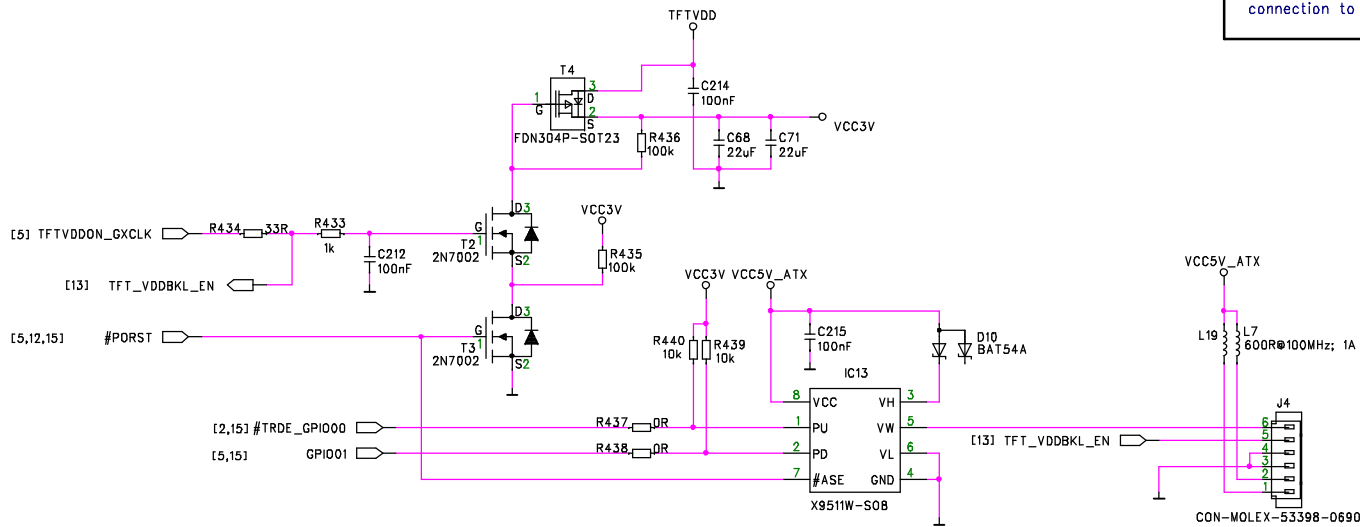


Power


Stromlaufplan	Datum: 03.11.2004	Size: A3
 Kontron ... always a Jump ahead!	Titel: ESA2	PCB: L3/B3
Kontron CSS GmbH	Nr.: 3802.00	Rev: 03
	Datei: ESA2_xx03.SCH	Blatt: 12/16

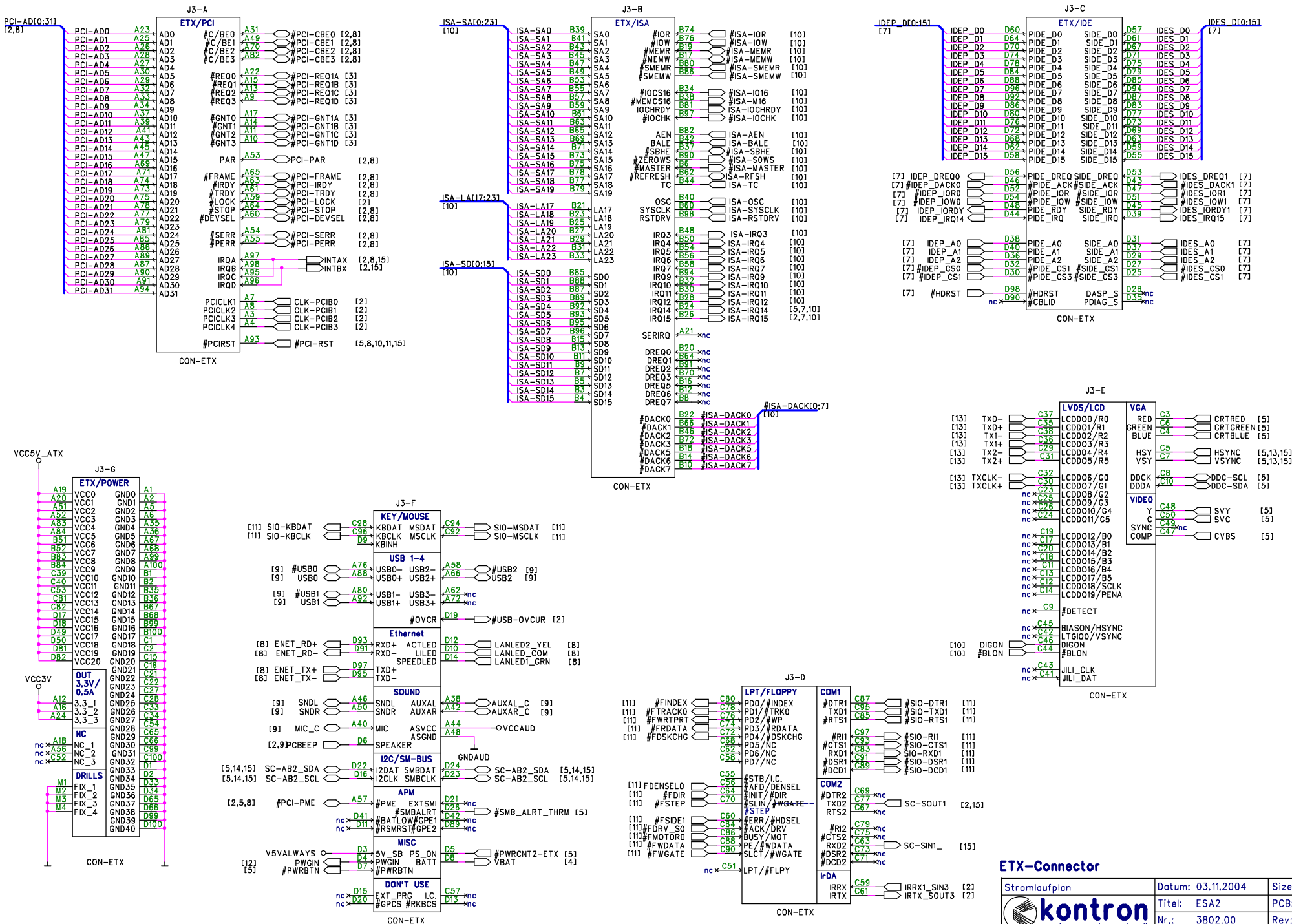


Attention!
 Use separate power planes for every of the following GND-Connections marked as:
 ->GNDLVDS (only on this page)
 make Ground Cut with a single connection to GND-Plane




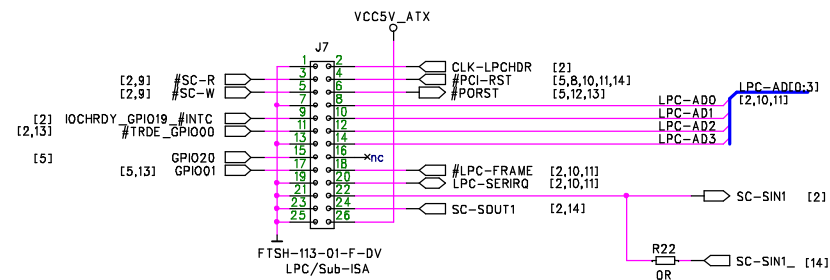
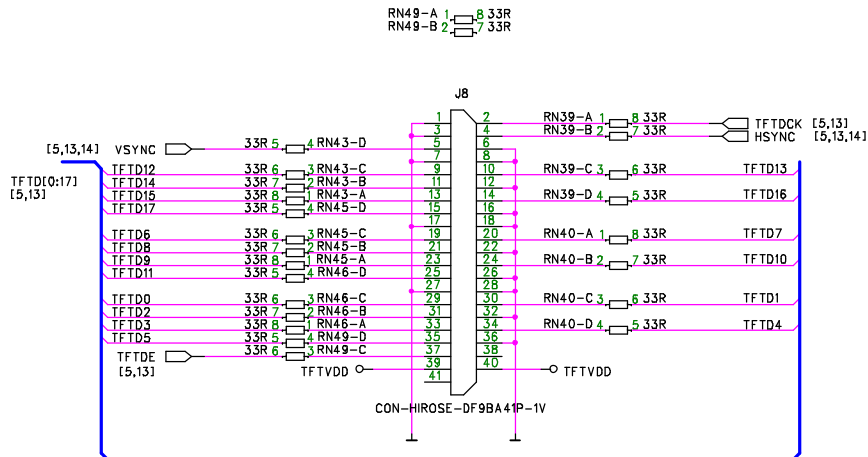
LVDS-TFT_Backlight

Stromlaufplan	Datum: 03.11.2004	Size: A3
 kontron ... always a Jump ahead!	Titel: ESA2	PCB: L3/B3
Kontron CSS GmbH	Nr.: 3802.00	Rev: 03
	Datei: ESA2_xx03.SCH	Blatt: 13/16

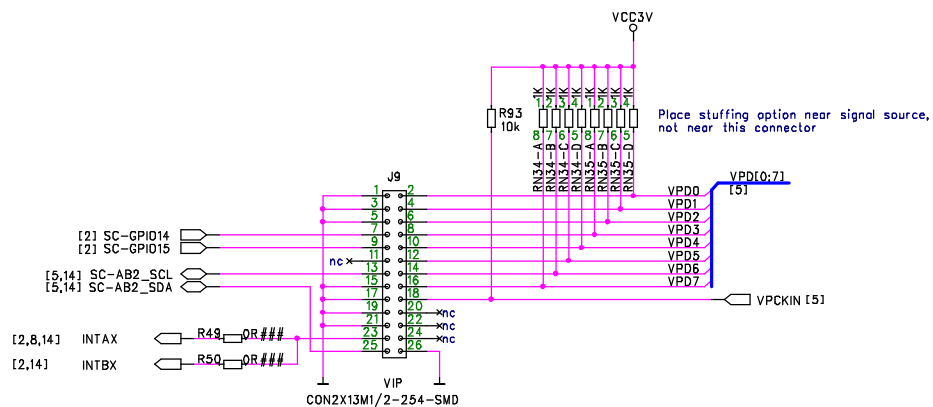


ETX-Connector


Stromlaufplan	Datum: 03.11.2004	Size: A3
 kontron ... always a Jump ahead!	Titel: ESA2	PCB: L3/B3
Kontron CSS GmbH	Nr.: 3802.00	Rev: 03
	Datei: ESA2_xx03.SCH	Blatt: 14/16



R22 mounted for ETX-COM2 connection.
Remove R22 when LPC/Sub-ISA
Connector is used!



VIP_VOP_LPC-Sub_ISA-Headers

Stromlaufplan	Datum: 03.11.2004	Size: A3
 ... always a Jump ahead! Kontron CSS GmbH	Titel: ESA2	PCB: L3/B3
	Nr.: 3802.00	Rev: 03
	Datei: ESA2_xx03.SCH	Blatt: 15/16

Rev.1 – L1/B1:

First Prototype

Rev.2 – L2/B2:

Signals SINI and SOUT1 routed to ETX COM2
SINI via R22 (0 Ohm) for switching between COM2 and LPS/Sub-ISA Header.

IC9 PIN 7 disconnected from PWRCNT2. Added pullup R23.

#PORST: Pullup R24 added.

#SC-ROMCS: Strap R63 removed since signal is also connected to RN2-B pullup.

#PCIPME pullup R220 moved to IC1 PIN AJ6

PWRCNT2 pullup R219 moved to IC1 PIN AL7

Added pullup R25 to #PWRBTN

Added T7 and R26 to invert #ONCTL for IC12 PINB

Added T9 and R26 to invert PWRCNT2
=> new signal #PWRCNT2-ETX to ETX-Connector PIN D5 (PS_ON)

R209, R210 value changed to 10M

Added R28 pullup for #USB-OVCUR

Added Filtering on AVCCPLL2; L4, R201, C116

Added Filtering on AVCCPLL3; L2, R30, C74

Added Pullups at #ISA-DACKs and #ISA-SBHE

Added Pulldowns at ISA-AEN, ISA-TC and ISA-BALE

R203 changed from 9,3R to 10R.

Rev.3 – L3/B3:

Removing DMA support on ISA Bus:

#ISA-DACK Bus deleted at IC10

Signal #ISA-DACK6 IC10 PINI28 changed to HERFRA for supporting strapping option

ISA-DRQ Bus deleted at ETX-Connector

Signal #LPC-DRQ removed from IC10 PIN 22

Signal #LPC-DRQ removed from LPC-SubISA-Connector J7 Pin 16

R453 marked as unmounted while pullup already at SC1200 (RN63)

Pullup R47 Signal DIGON to VCC3V added.

Pullup R48 Signal #BLON to VCC5V_ATX added.


Changed Signal Mapping on IC21 DS90CF365

TFTDI7:121 now connected to TxIN15:01

TFTDI5:01 now connected to TxIN17:121

C80 100nF added at IC22

C17 100nF added at IC24

Stromlaufplan	Datum: 03.11.2004	Size: A3
 kontron ... always a Jump ahead! Kontron CSS GmbH	Titel: ESA2	PCB: L3/B3
	Nr.: 3802.00	Rev: 03
	Date: ESA2_xx03.SC	Blatt: 16/16